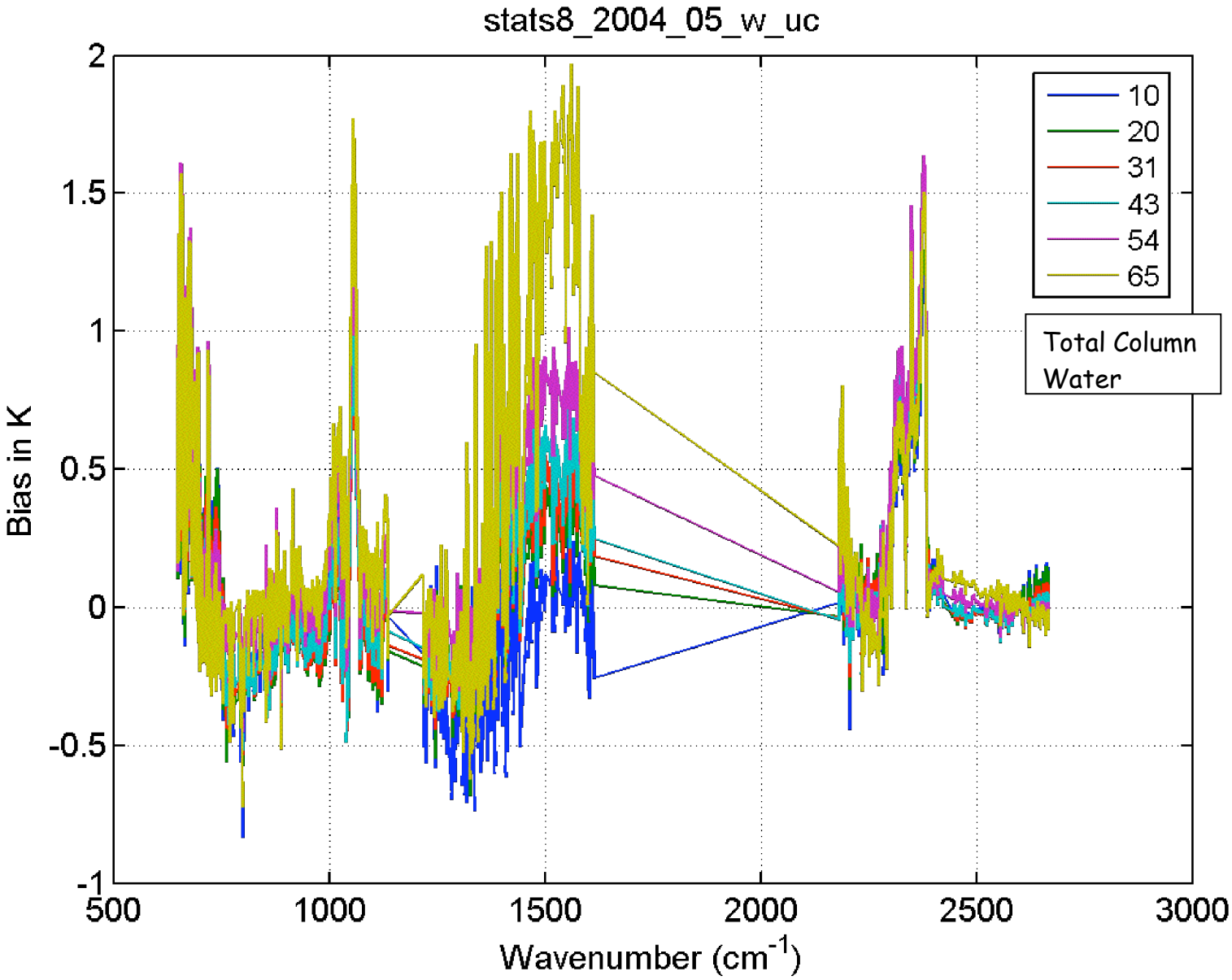
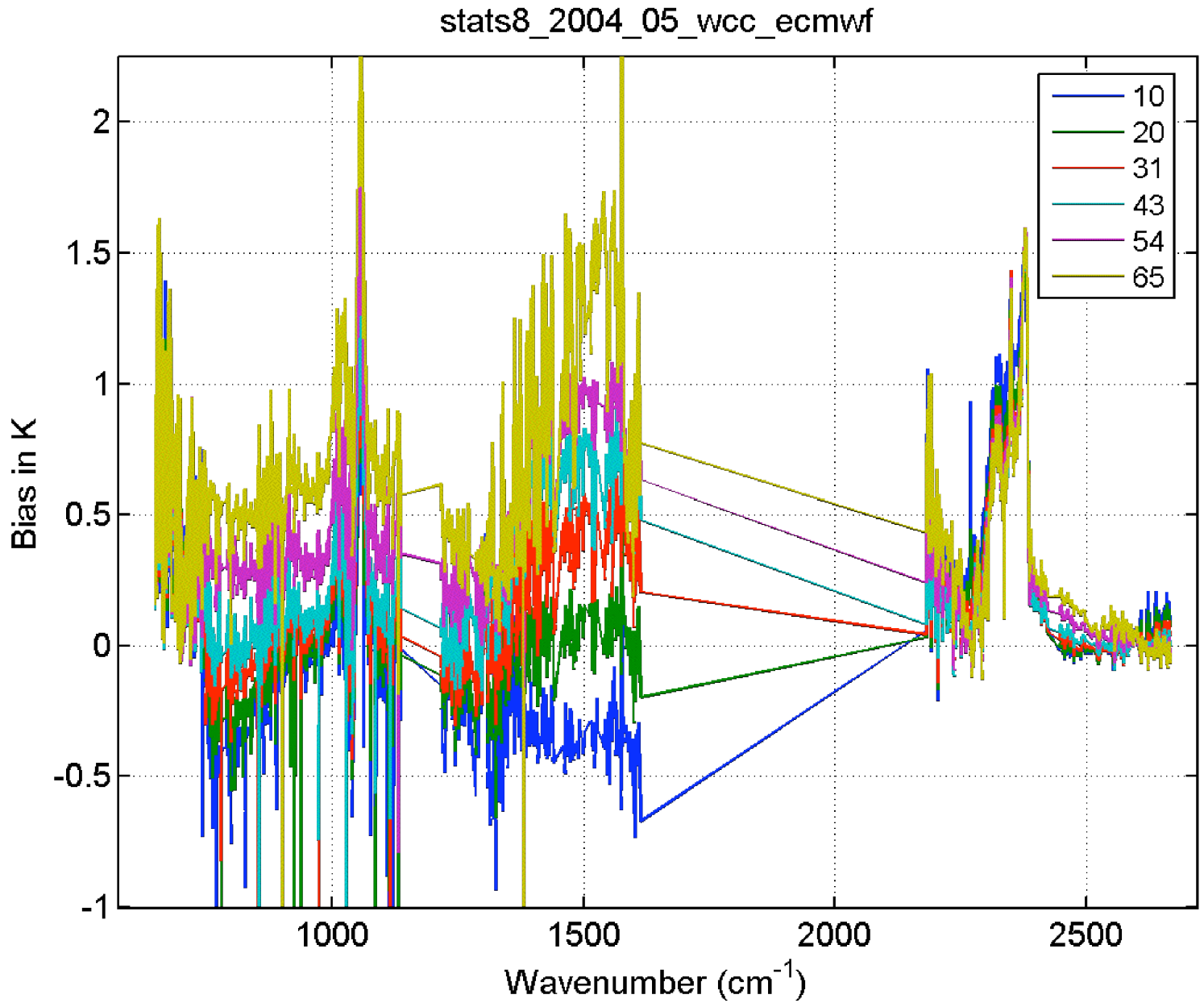
Cloud-Cleared Radiance Validation

- Compare cloud-cleared radiances to our uniform-clear radiances
- Use ECMWF as intercomparison standard
- Does CO_2 signal make it through cloud-clearing?

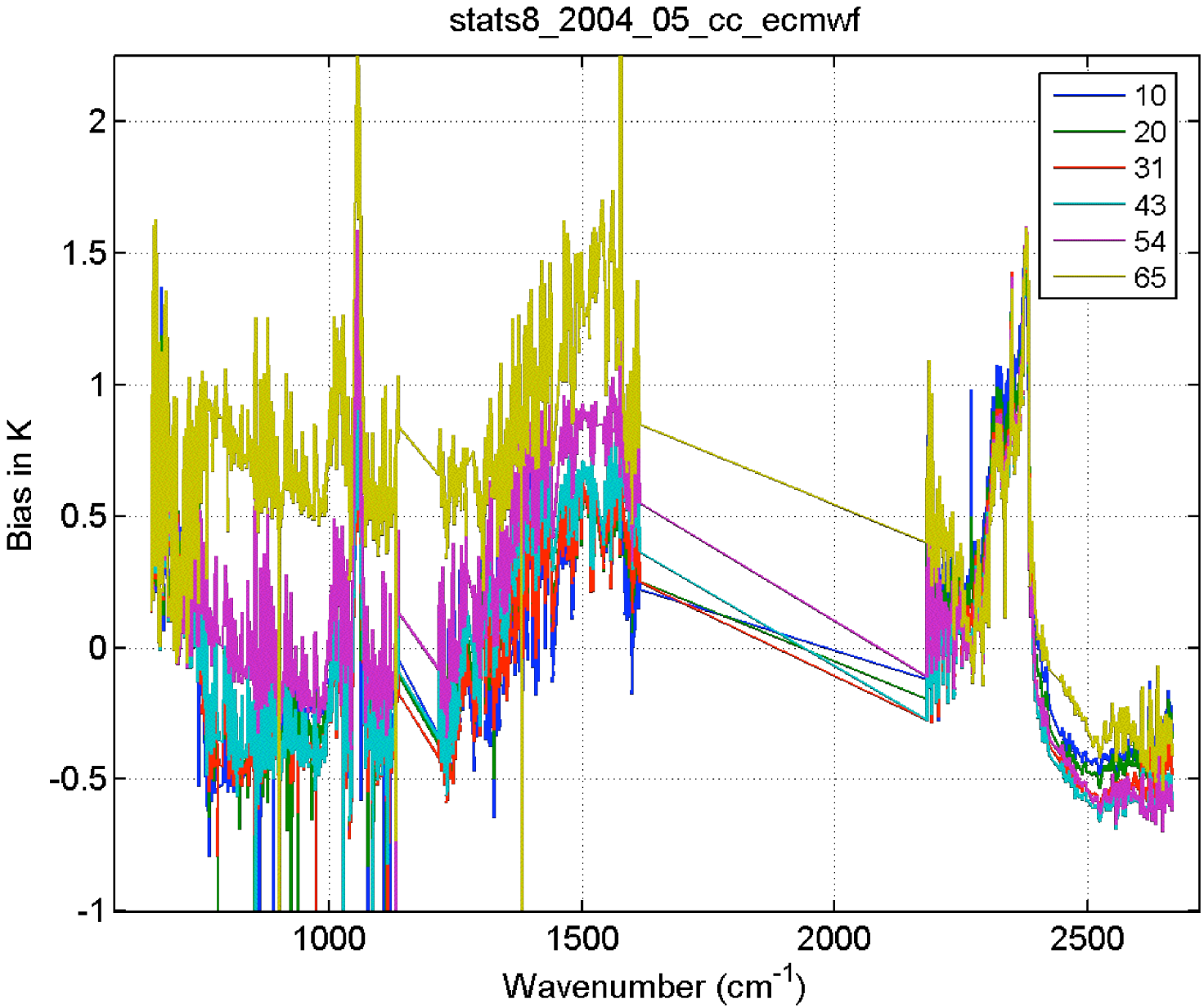
Uniform Clear (UMBC) Stats: Q/SST Adjust



Cloud-Cleared Stats: Q/SST Adjust

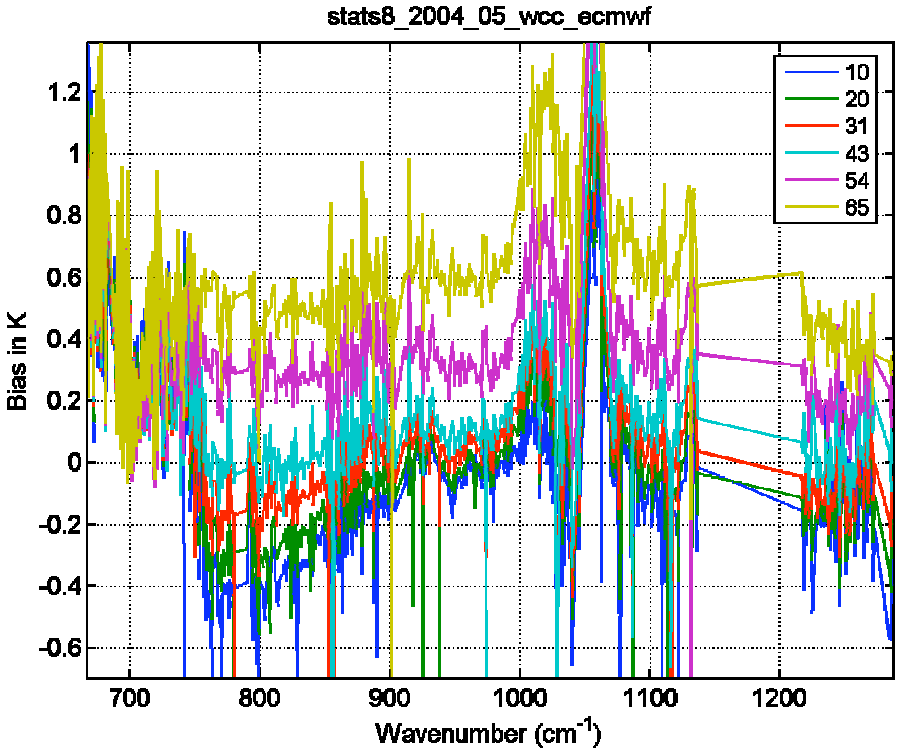


Cloud-Cleared Stats: No Q/SST Adjust

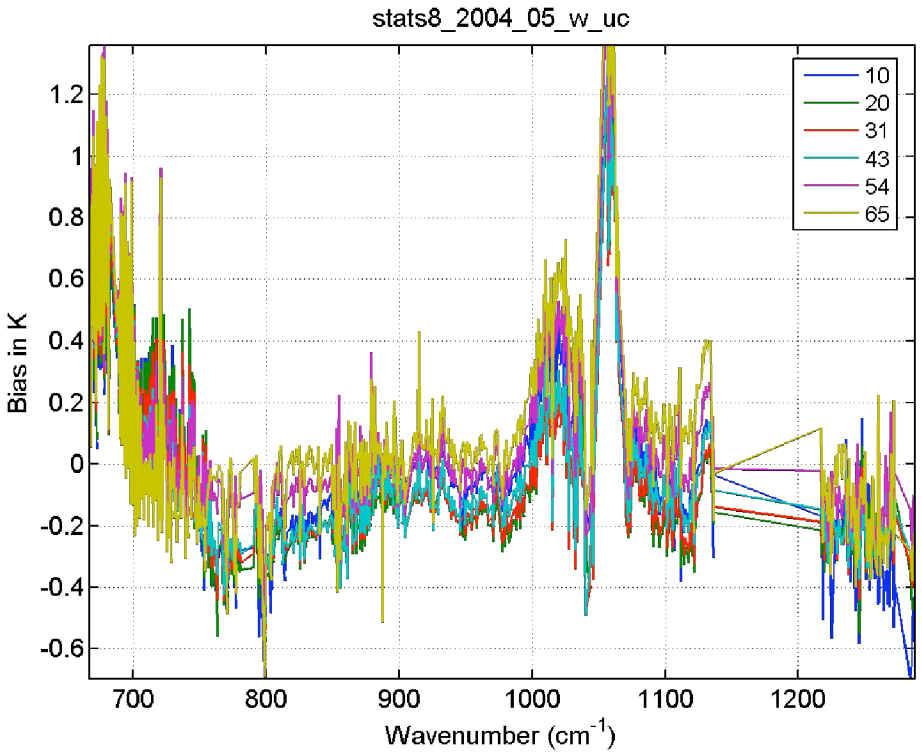


Window Region Only

Cloud-Cleared Data

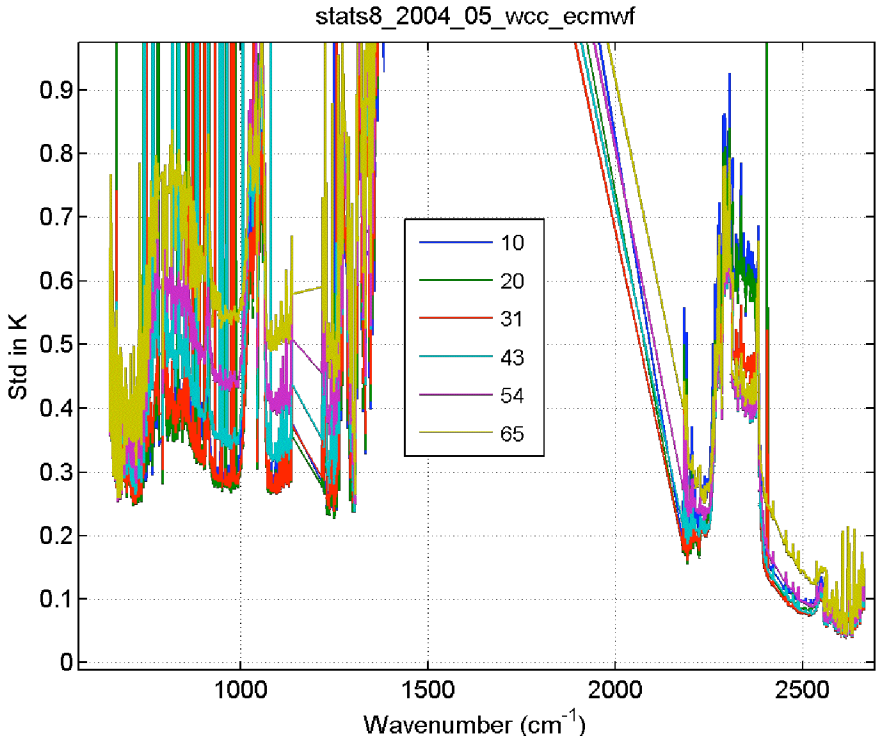


Uniform-Clear Data

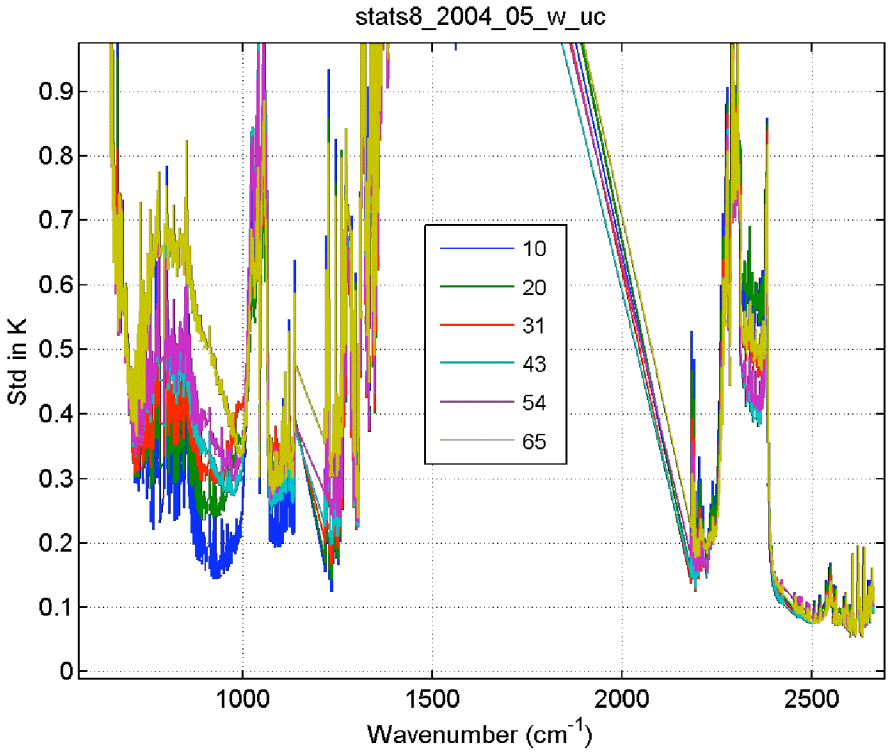


Standard Deviations

Cloud-Cleared Data



Uniform-Clear Data

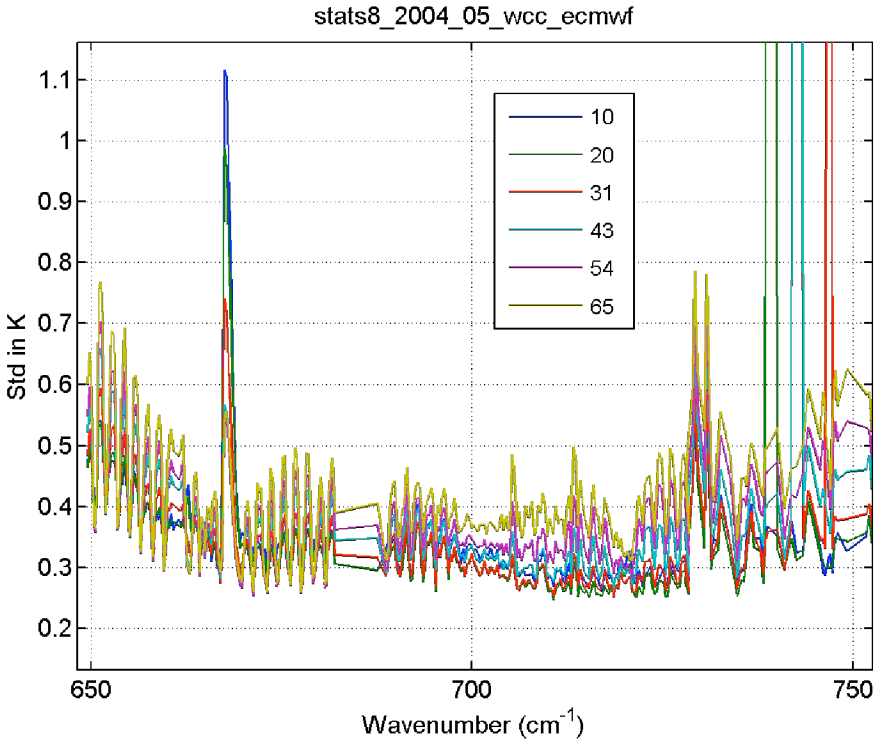


Water band std's very similar (off scale)

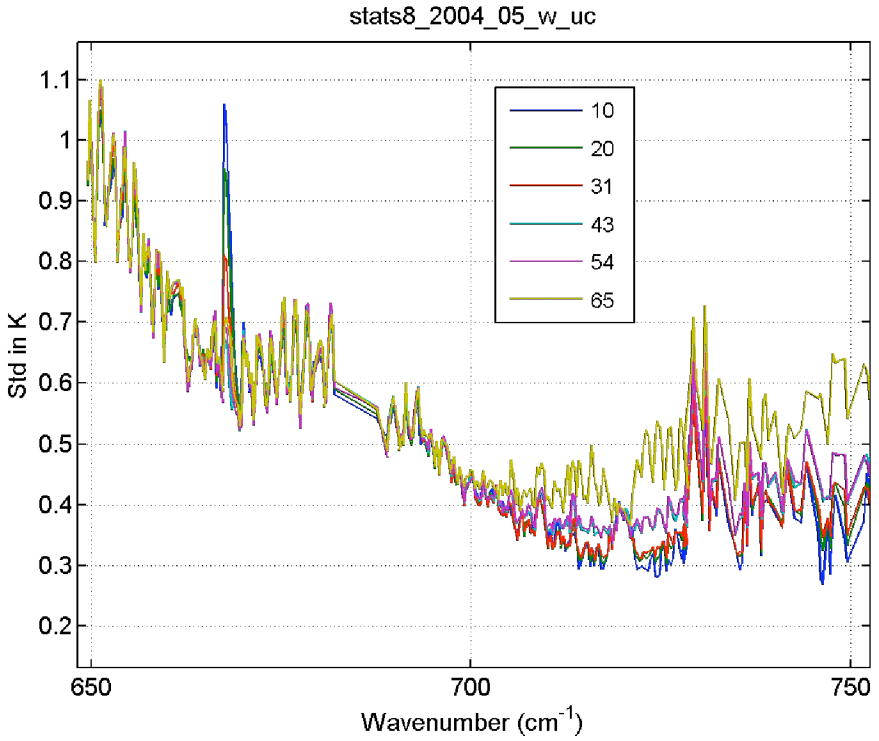
Cloud-cleared std lower in 15 micron region

Standard Deviations (zoom)

Cloud-Cleared Data



Uniform-Clear Data

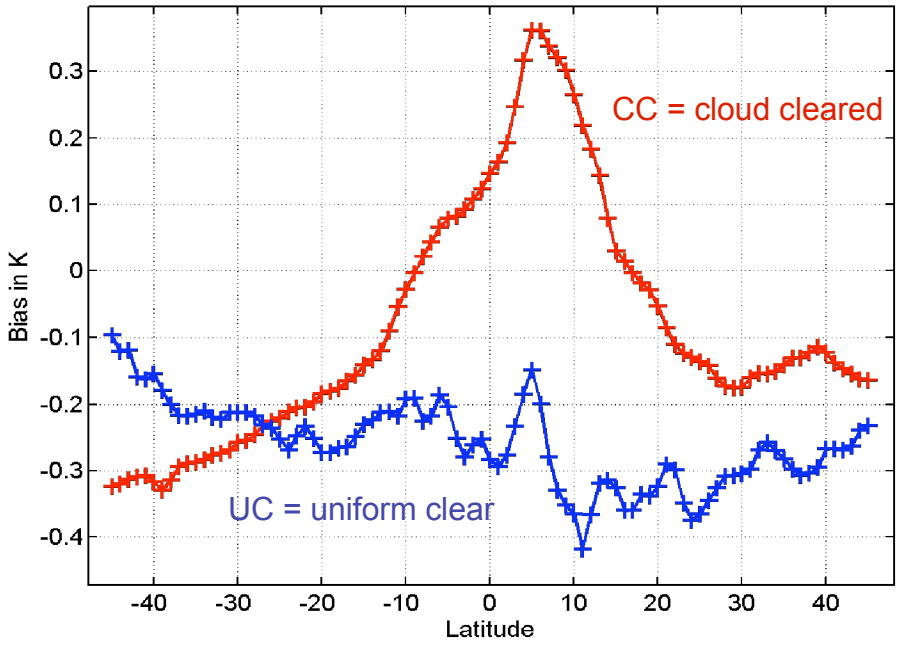


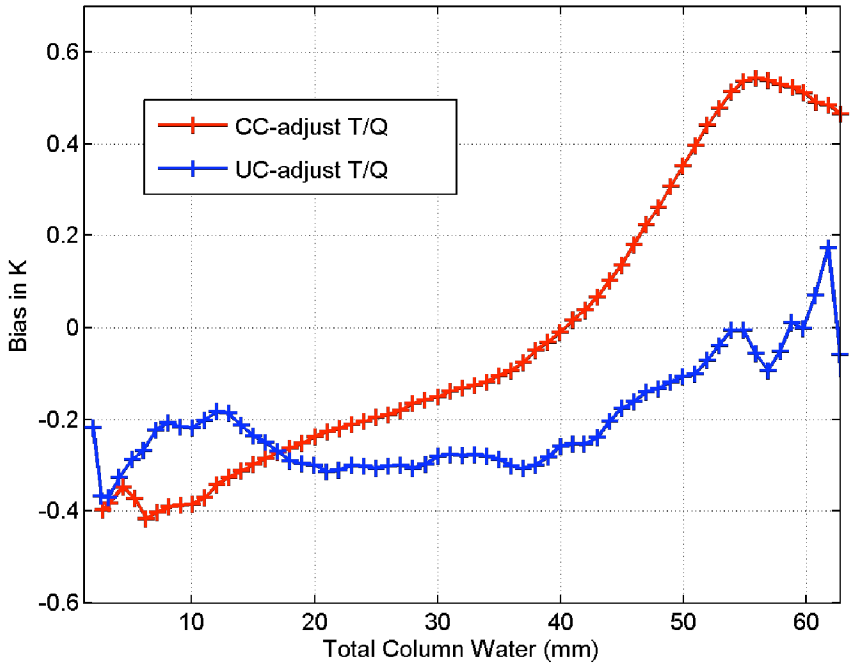
Std. much higher for uniform-clear data below 700 cm^{-1}

Biases very similar in the 650 – 750 cm^{-1}

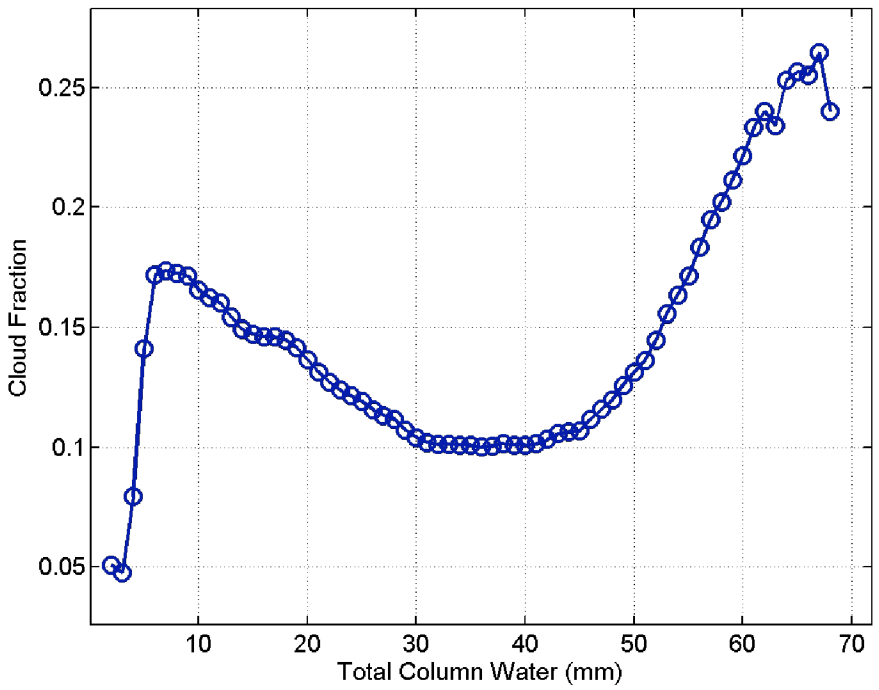
805 cm^{-1} Bias

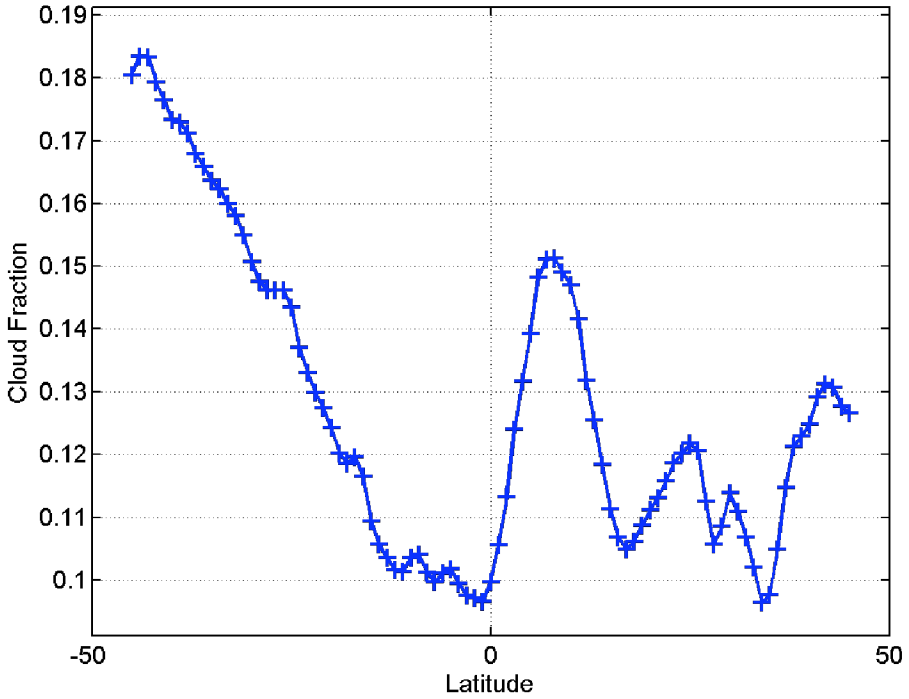
(Window Channel with Strong Water Continuum)



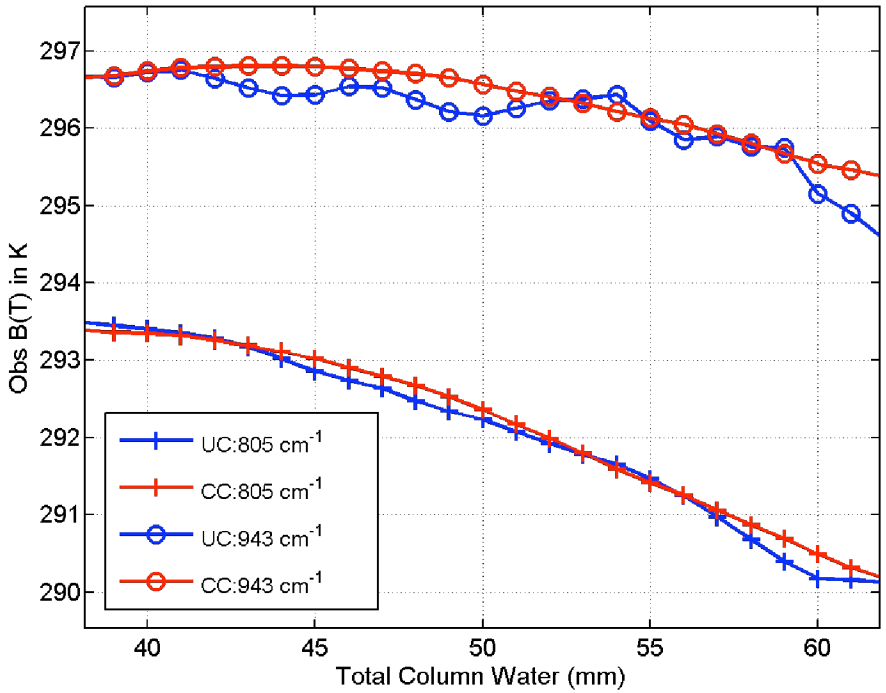


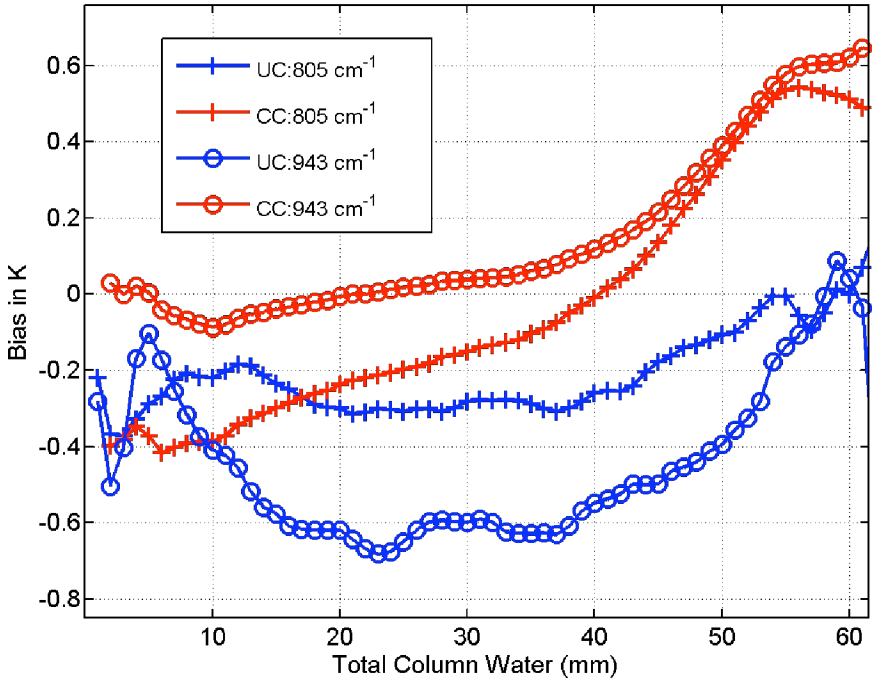
Cloud Fraction vs Water/Latitude





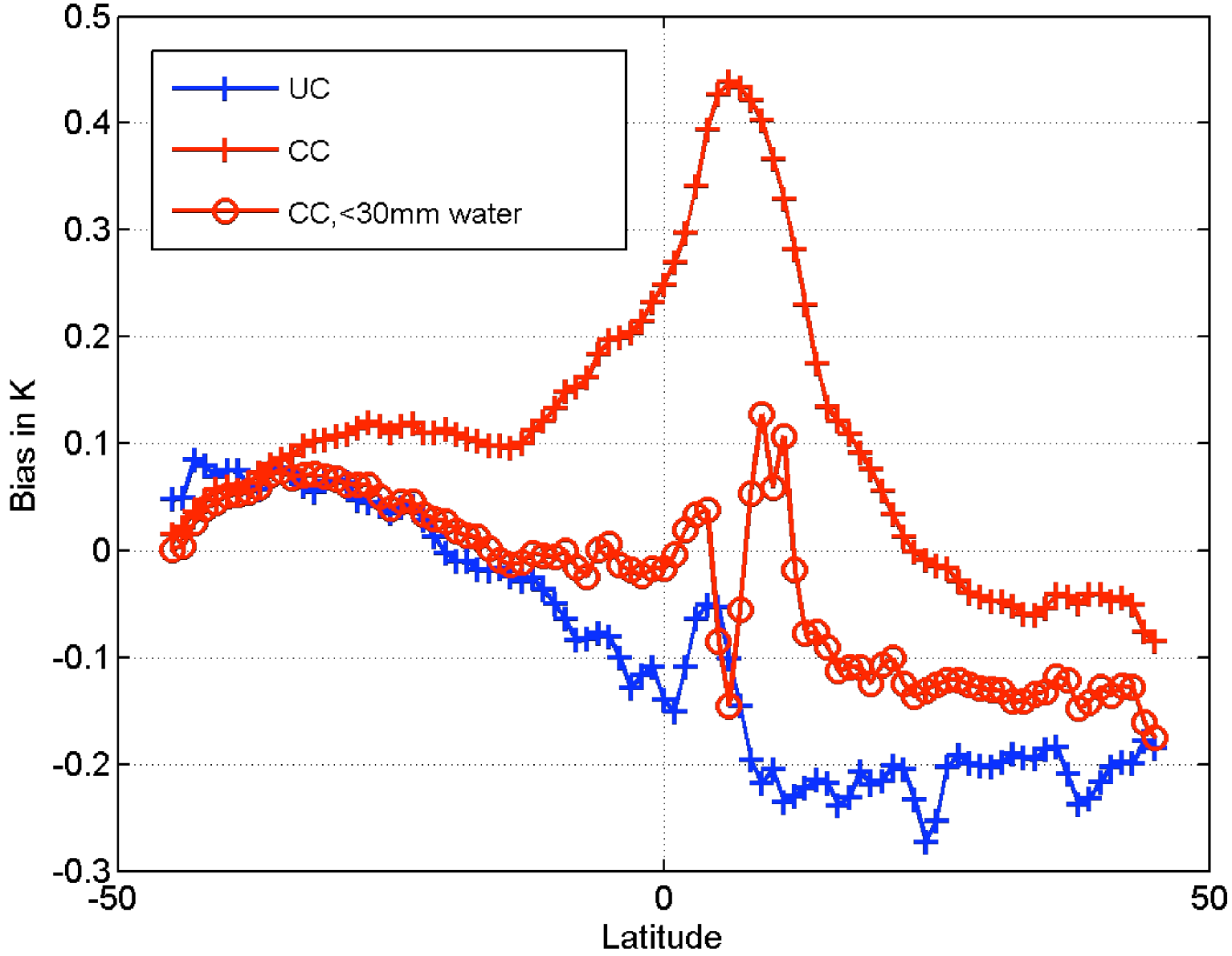
High Water Bias: Due to Clouds?





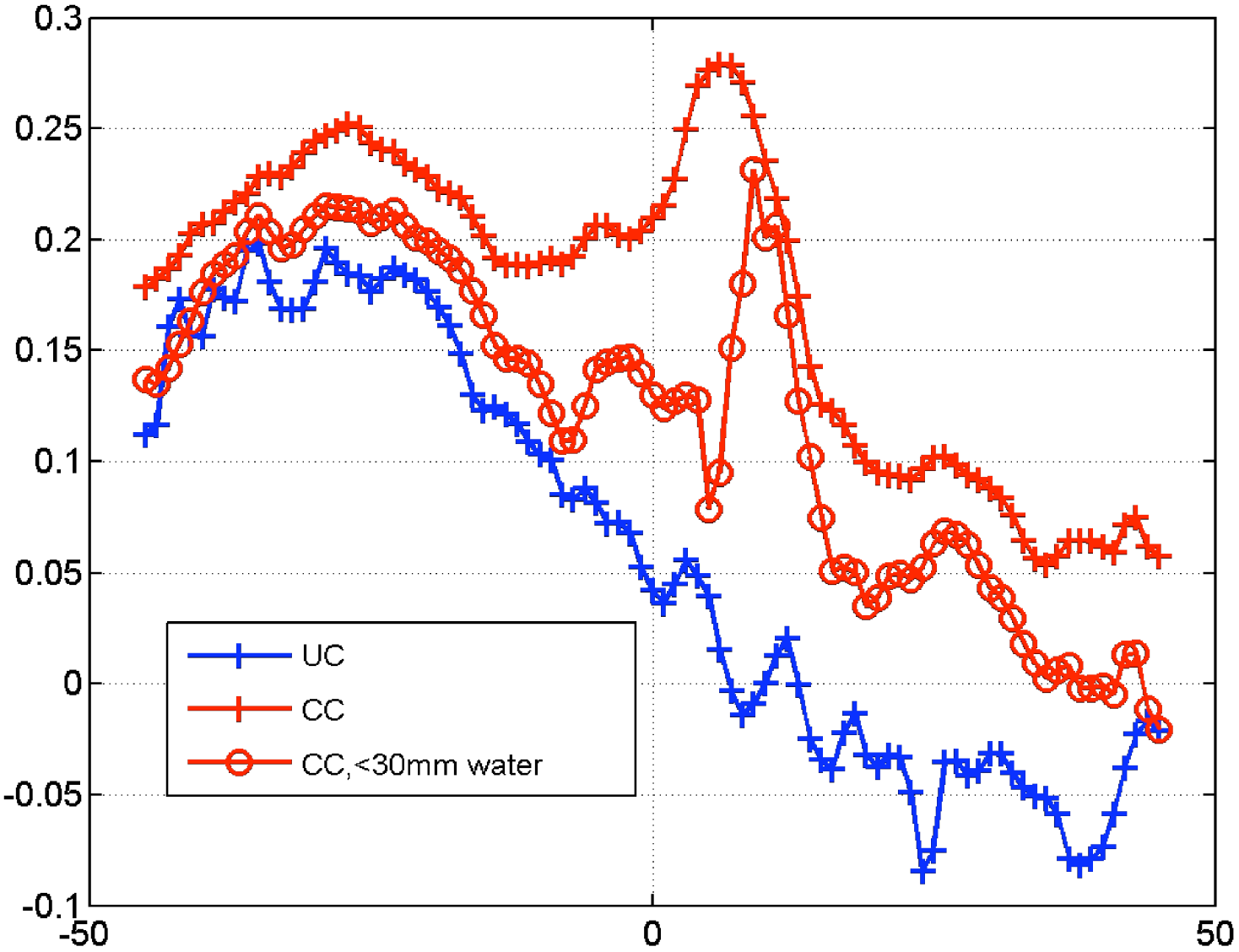
791 cm^{-1} Bias vs Latitude

(CO_2 channel)



2391 cm^{-1} Bias vs Latitude

(CO_2 Channel)



1304 cm^{-1} Biases vs Latitude

(CH_4 Channel)